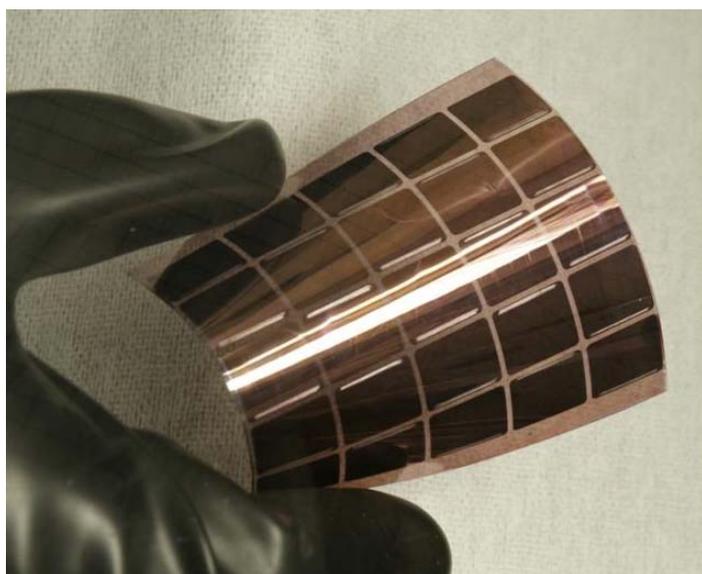


New Materials Science Center at the KIT

State Grants EUR 18.7 Million– Energy Storage and Energy Conversion Will Be in the Focus



Module of organic semiconductors: Solar cells of a few hundred nanometers in thickness are connected in series. (Photo by: Alexander Colsmann)

Novel materials for electrochemical energy storage and energy conversion will be in the focus of the Materials Science Center (MWZ) that will be established at the Karlsruhe Institute of Technology. Work will concentrate on the development of new battery materials and concepts – an essential prerequisite for future electric vehicles. In addition, the fundamentals of organic solar cells of increased efficiency shall be studied. The state will grant EUR 18.7 million from its Offensive for the Future IV. The total funding volume will amount to EUR 37.3 million.

The second half of the funds still remains to be acquired from science construction support funds of the Federal Republic of Germany and the federal states. If the application will be successful, construction of the MWZ will start in 2011. The new center with a total of presumably 180 employees will be built on the southern KIT campus between the Audimax and the chemistry buildings. At the moment, 18 professors from five university faculties are involved. Another two materials science centers in Baden-Württemberg shall be established at Freiburg and presumably at Heidelberg.

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Presently, organic solar cells are reaching a very low efficiency as energy converters only. It is the objective of the new KIT center to develop materials, by means of which the cells may reach efficiencies of more than 20%. In this way, solar energy might contribute considerably to energy supply.

A problem in integrating renewable resources in the energy mix of the future still is the storage of the energy that is produced in an irregular manner or at certain times of the day or year only and to make this energy available at a later point of time. This requires storage materials of much higher energy density than the materials studied so far. However, only a small fraction of the theoretically possible value of these new materials can already be made use of. "It is another challenge to improve the service lives of the batteries, such that they can be charged and discharged as often as possible. We want to make a big step towards reaching this objective", says Professor Michael J. Hoffmann from the KIT Institute for Ceramics in Mechanical Engineering and coordinator of the new center.

"The scientists of the MWZ will not only study new materials, but also their processing and integration in complete systems like batteries and solar cells", underlines Hoffmann, "hence, we will build a bridge between natural and engineering sciences".

The Karlsruhe Institute of Technology (KIT) is the merger of the Forschungszentrum Karlsruhe, member of the Helmholtz Association, and the Universität Karlsruhe. This merger will give rise to an institution of internationally excellent research and teaching in natural and engineering sciences. In total, the KIT has 8000 employees and an annual budget of 700 million Euros. The KIT focuses on the knowledge triangle of research – teaching – innovation.

The Karlsruhe institution is a leading European energy research center and plays a visible role in nanosciences worldwide. KIT sets new standards in teaching and promotion of young scientists and attracts top scientists from all over the world. Moreover, KIT is a leading innovation partner of industry.

This press release is available on the internet under www.kit.edu.

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